EXTROVERSION OF THE BLADDER.

RELIEF BY TRANSPLANTATION OF THE BLADDER INTO THE RECTUM.

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In cases of extroversion of the bladder, no operation met with any noteworthy success until the work of Petersen had shown that by preserving the valvular termination of the ureter in the bladder, the transference of the ureters into the intestine was capable of being successfully accomplished. The most satisfactory application of this knowledge was made by Peters of Montreal. The old plastic operations of Wood and Ayres made the patients possibly a little more comfortable, but did nothing to relieve a condition which they, as well as their neighbors, felt to be revolting.

On March 11th, 1905, I was asked by Dr. Empey, of Crosshills, Keighley, to see a youth, J. B., aged nineteen, who fifteen years before had had a plastic operation performed for extroversion of the bladder. Flaps from the lateral aspects of the abdominal wall had been turned over to the middle line until a sort of bridge had been formed over the upper part of the exposed mucous surface. The lower part of the bladder mucosa, however, that which bore the ureters, was still exposed, and urine therefore escaped on to the surface of the abdomen. It was there caught in the usual rubber receptacle, of pestilent odour, and drained downwards to the leg. The patient, with increasing years had become more painfully aware of the misery of his condition and begged to have something, anything done to relieve him of his terrible affliction.

On examining him I realized at once that the upper part of the bladder mucosa was healthy; that it might be preserved. I therefore decided not to transplant his ureters, but to transplant his whole bladder, or so much of it as the operation might show to be vascular enough to transplant, into his rectum. It occurred to me that if a large area of the bladder could be grafted, so to speak, into the rectum, that the capacity of the bowel would be increased, and a veritable cloaca formed. My only doubt was that the vascular supply furnished along the ureters might be insufficient for a large area of the bladder. But in the operation I now describe I found that, when the edges of the bladder were trimmed with scissors, a free oozing of blood occurred from the cut surface. I therefore was able to transplant the entire bladder. The following are the details of the operation:

Operation.—The ureters were first catheterised. (Fig. 1.) Owing to the previous constant friction against the exposed bladder mucosa, which pouted exuberantly, this little manœuvre was by no means easy. A catheter was passed for 4 inches into each ureter and was fixed there by a single stitch which caught up the tube on one side and the bladder on the other. A vertical median incision was then made from the exposed bladder mucosa towards the umbilicus, the flaps which had been turned over to the middle line in the previous operations being completely cut through. On turning aside the flaps thus made the upper, previously covered, mucous surface of the bladder was exposed; it was found to be smooth, thin and entirely different in character and appearance from that of the lower exposed part. An incision all round the margin of the mucous membrane of the bladder was now made, between the mucosa and the skin, and the incision was deepened by degrees until a good thickness of the bladder could be raised up. The dissection from the margin of the bladder towards the ureters was continued, round the whole circumference, little by little. This was difficult in part owing to the fact that there was much scar tissue left from the former operations, in part because the great vascularity demanded frequent cessation to restrain the hæmorrhage by pressure. The separation above the pubes was most difficult, and here the prostate had to be separated with great care.

The purpose of this process of separation was to isolate the whole of the bladder, leaving only as its pedicle, so to speak, the two ureters. As much tissue was left round each ureter as possible, so as to avoid the possibility of damage either to the

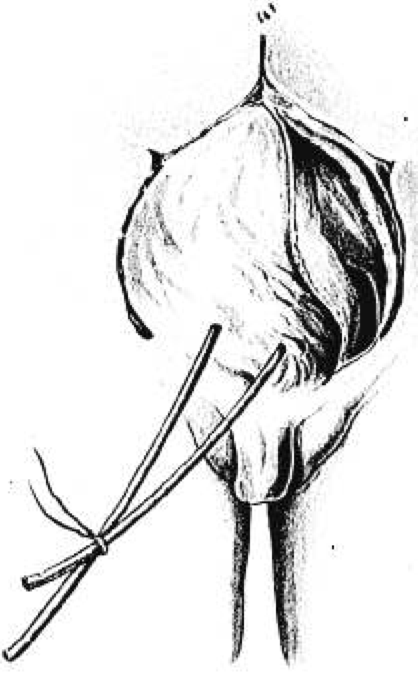

FIG. 1.—Catheterisation of the Ureters. The Scars of the former flap operations are visible.

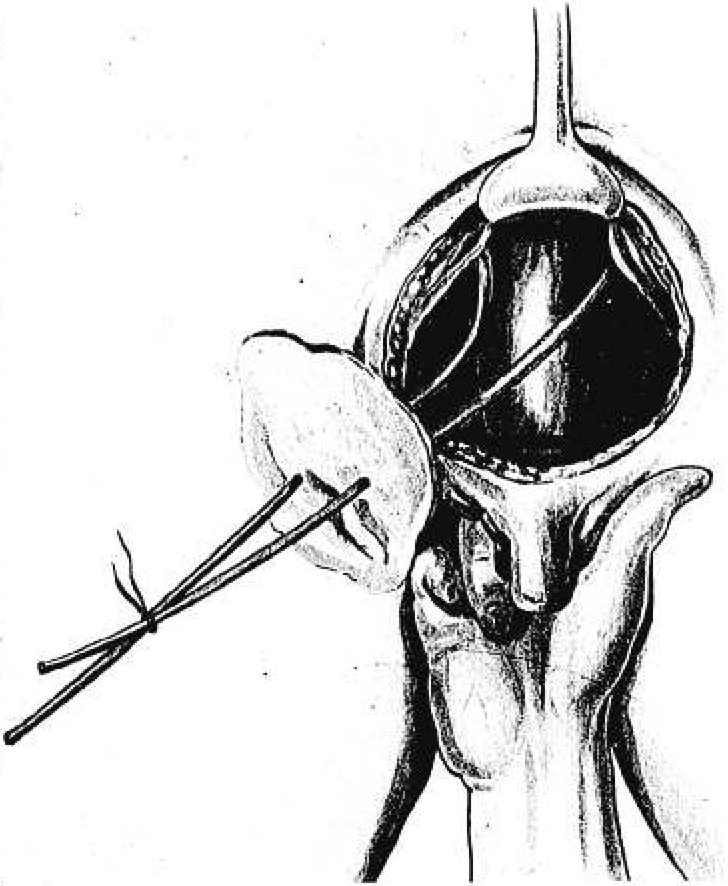

Fig. 2.—The Bladder Separated (in the actual operation, the ureters were not stripped so much as in the figure).

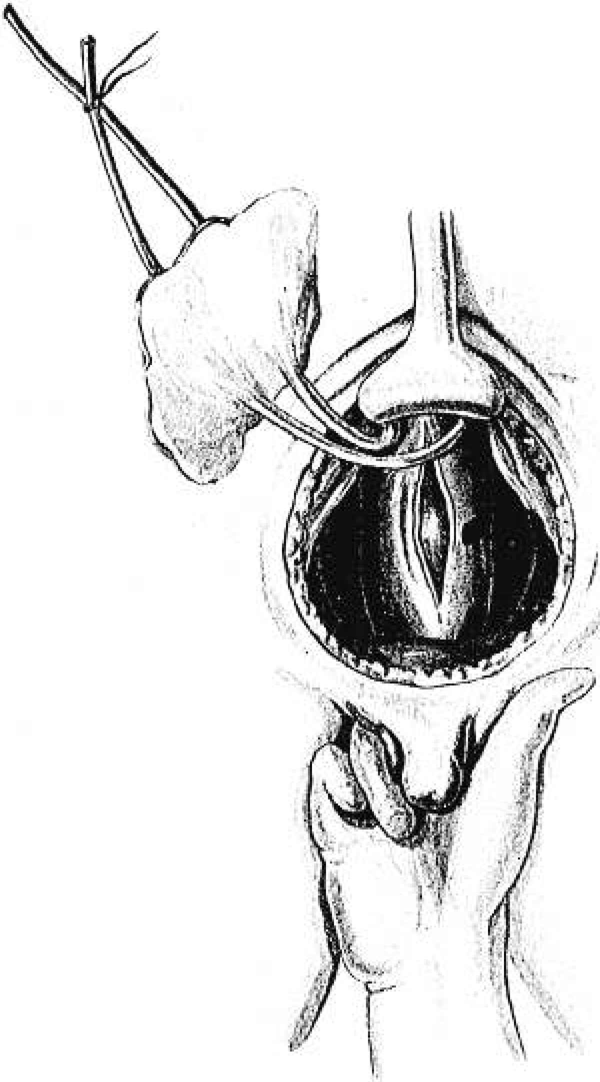

FIG. 3.—The rectum opened ready for the transplantation of the bladder.

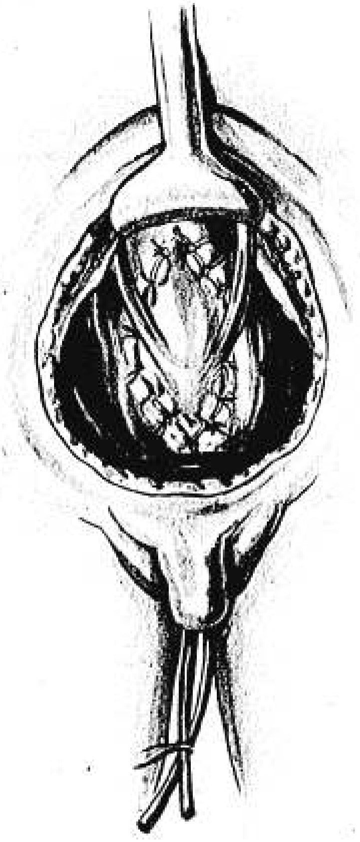

FIG. 4. –The transplantation completed.

ureter itself or to its vessels. In the annexed diagram (Fig. 2.) the ureters are shown clearly defined. This was not their condition during the operation; the figure is so drawn only for the purpose of making the details of the operation clear. As soon as the bladder was well isolated it was drawn upwards towards the umbilicus and there held by an assistant. In the bottom of the wound the rectum was now seen, and, above, the peritoneal reflection on to it. The serous covering was then stripped upwards from the front of the rectum until 4 or 5 inches of the bowel lay exposed at the bottom of the wound. In stripping the peritoneum up, a small rent was made into it, which was closed at once by a continuous catgut suture.

The finger of an assistant was now passed into the rectum to make it prominent, and along the anterior surface of the bowel an incision about 3½ inches in length was made. (Fig. 3.) The upper and lower ends of this incision, and the mid-points of the sides were held with small vulsella, until a large opening was made. Into this opening the bladder was placed, being turned upside down so that its former anterior surface became posterior, and its former lower end became the upper. The ureters instead of passing forward to the bladder passed backward and the catheters passed into the rectum and out at the anus. The edge of the bladder and the cut edges of the rectum were now sutured together, by two stitches that were continuous, one taking the right side, and the other the left. (Fig. 4.) The sutures were passed after the manner of Lembert so that no mucous membrane was included in them. A few additional interrupted sutures were necessary here and there.

When the sutures seemed to be securely uniting the bladder and the rectum, the wound was dried and the skin edges along the original median incision were drawn together. At the upper end, the edges came well into apposition but about an inch at the lower part had to be left open. The catheters which had been introduced into the ureters now passed out of the anus; the sphincter had previously been stretched. The operation lasted an hour and a half.

The after progress of the case was satisfactory. The catheters remained in the ureters for four days, the urine being collected into a bottle. After their removal urine passed into the rectum and dribbled out at the anus, which, owing to the stretching of the sphincter, as yet exerted no control. On the seventh day, a little urine began to leak by the abdominal wound, and this continued for a week. On the fifteenth day an anæsthetic was again administered, and the leaking point in the former line of suture discovered, and made good. From this day the wound remained absolutely dry, all urine escaped by the rectum and control gradually returned until at the end of a month it was perfect. Urine was then passed by the rectum about every two hours. The interval between the acts of emptying the rectum has gradually increased until now (Nov. 1905) the shortest period is three hours and the longest five hours. The urine is quite sweet and is normal on examination.

When the rectum is now examined the line of junction between the mucous membrane of what was the bladder and the mucous membrane of the rectum cannot be distinguished. All feels smooth and even and continuous. There is a fairly capacious cloaca.

NOTE.—The accompanying drawings were kindly made for me by Miss Ethel M. Wright.